

REMARKS

Claims 1-7 and 9-10 are presently pending in this application.

Claim 8 has been canceled without prejudice. Claims 5 and 6 have been amended for clarification only, without prejudice. It is respectfully submitted that the amendments made herein are supported by the specification and the original claims and introduce no new subject matter. For example, support for the amendments made to claims 5 and 6 can be found from the original claims 5 and 6, respectively. No additional claim fees are necessitated.

Entry of the amendments made herein is proper and respectfully requested.

Copending Applications

Applicants respectfully submit that the co-pending U.S. Application Nos. 10/530,136 (WO 2004/041798) and 10/532,478 (WO 2004/046125) relating to 1, 2, 4-thiadiazole compounds were cited in an Information Disclosure Statement (IDS) filed with the present application. Two additional co-pending applications are cited in a Supplemental IDS to be filed herewith: (1) U.S. Application No. 10/498,651 (U.S. Patent Application Publication No. 2005/0215578 A1, corresponding to WO 2003/059897 A1); and (2) U.S. Application No. 10/528,398 (U.S. Patent Application Publication No. 2006/0014962 A1, corresponding to WO 2004/033452 A1).

Claim Rejection under 35 U.S.C. § 101

In the Office Action, the Examiner has rejected claim 8 under 35 U.S.C. § 101, alleging that the claimed invention is directed to nonstatutory subject matter.

The rejection became moot after entry of the amendments made herein, because claim 8 has been cancelled. Withdrawal of the rejection under 35 U.S.C. § 101 of claim 8 is therefore respectfully requested.

Claim Rejections under 35 U.S.C. § 103

The Examiner has rejected claims 1-10 under 35 U.S.C. § 103(a) as being unpatentable over Kristiansen et al., EP 0116,515A1 (“EP ‘515”) and Baker et al., U.S. Patent 5,405,853 (“U.S. ‘853”).

Reconsideration and withdrawal of the rejection and allowance of the pending claims are respectfully requested for at least the following reasons.

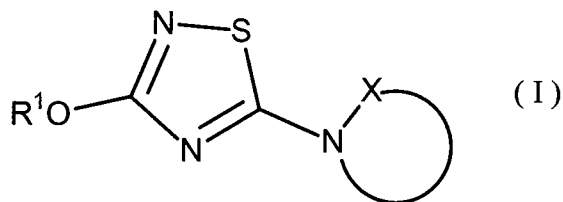
The Examiner has the burden of establishing a *prima facie* case of obviousness. M.P.E.P. §2142. The Examiner can satisfy this burden only by showing an objective teaching in the prior art, or that knowledge generally available to one of ordinary skill in the art, that would lead the individual to combine the relevant teachings of the references in the manner suggested by the Examiner. M.P.E.P. § 2143.01. To establish *prima facie* obviousness of a claimed invention, all the claimed limitations must be taught or suggested by the prior art. MPEP §2143.03.

After entry of the current claim amendments, claims 1 and 9 are the only two independent claims.

Rejection of Claims 1-7

The 1,2,4-thiadiazole compounds in claim 1 and its dependent claims 2-7 have a C₃-C₇ alkynyloxy substituent at the 3'-position of the thiadiazole ring. Claim 1 recites, *inter alia*:

“A 1,2,4-thiadiazole compound of the formula (I):

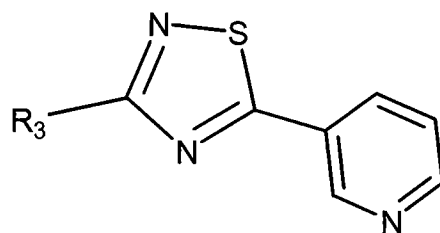


wherein R¹ represents C₃-C₇ alkynyl”

Applicants respectfully submit that EP ‘515 in view of U.S. ‘853 does not render claim 1 and its dependent claims 2-7 obvious, because EP ‘515 and U.S. ‘853, taken alone or in combination, fail to disclose or suggest a 1,2,4-thiadiazole compound having a C₃-C₇ alkynyloxy substituent at the 3'-position of the thiadiazole ring.

The Examiner alleges that the instant claims “differ from the reference in that they are of different generic scope,” and that one having ordinary skill in the art “would have been motivated to select the claimed compounds from the genus in the reference since such compounds would have been suggested by the reference as a whole.” Applicants respectfully disagree.

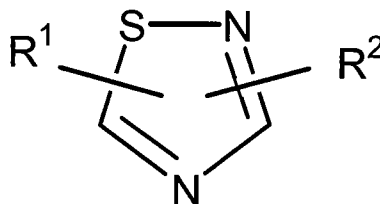
EP ‘515 discloses a 1,2,4-thiadiazole compound represented by the following formula:



wherein R₃ is a hydrogen atom or a C₁-C₄ alkyl group (see page 1 and claim 1 of EP ‘515).

In the closest case when R₃ is a C₁-C₄ alkyl group, the thiadiazole ring is substituted at the 3'-position with an alkyl group, not an alkynyloxy group as in the instant claims 1-7. EP ‘515 fails to teach or suggest a 1,2,4-thiadiazole compound having an alkynyloxy substituent at the 3'-position of the thiadiazole ring. The genus of compounds disclosed in EP ‘515 does not include those in the instant claims 1-7, because an alkyl substituent is different from an alkynyloxy substituent. Therefore, one cannot select the claimed compounds from the genus of compounds of EP ‘515 as suggested by the Examiner.

U.S. ‘853 fails to compensate for the deficiency of EP ‘515. US ‘853 discloses a 1,2,4-thiadiazole compound represented by the following formula:



wherein R₁ represents a non-aromatic azacyclic or azabicyclic ring system and R₂ is selected from the group consisting of halogen, -CF₃, -OR⁷, -SR⁷, -NR⁷R⁸, -NHOR⁷, -NHNH₂, -CN, -CO₂R⁷, -CONR⁷R⁸, C₂₋₄ alkenyl, C₂₋₄ alkynyl, C₃₋₆ cycloalkyl or C₁₋₂ alkyl substituted with -

OR⁷, -NR⁷R⁸, -SR⁷, -CO₂R⁷, -CONR⁷R⁸ or halogen; wherein R⁷ and R⁸ independently represent hydrogen or C₁₋₂ alkyl (see column 2, lines 48-55, and claim 1 of US '853).

In the closest case when R₂ is -OR⁷ and R⁷ is C₁₋₂ alkyl, the thiadiazole ring is substituted at the 3'-position with a C₁₋₂ alkoxy, not a C₃₋₇ alkynyloxy as in the instant claims. US '853 fails to teach or suggest a 1,2,4-thiadiazole compound having an alkynyloxy substituent at the 3'-position of the thiadiazole ring. The genus of compounds disclosed in U.S. '853 does not include those in the instant claims 1-7, because a C₁₋₂ alkoxy substituent is different from a C₃₋₇ alkynyloxy substituent. Therefore, one also cannot select the claimed compounds from the genus of compounds of U.S. '853 as suggested by the Examiner.

Absent the teaching or suggestion of the claim element, i.e., a C₃₋₇ alkynyloxy substituent at the 3'-position of the thiadiazole ring, EP '515 in view of U.S. '853 cannot render claim 1 and its dependent claims 2-7 obvious.

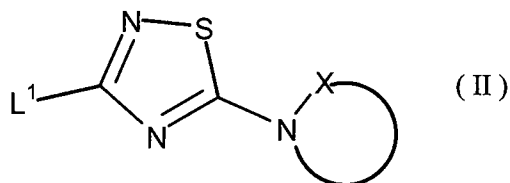
While any judgment of obviousness is based on hindsight reasoning, it is only permissible to take into account knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and without including knowledge gleaned *only* from the Applicant's disclosure. M.P.E.P. §2145, X, A. The Examiner has failed to identify *any objective* teaching in the prior art, or that knowledge generally available to one of ordinary skill in the art, that would lead an individual to use a C₃₋₇ alkynyloxy group as a substituent at the 3'-position of the thiadiazole ring of the 1,2,4-thiadiazole compounds of EP '515 or U.S. '853. Therefore, the Examiner appears to have impermissibly relied on the Applicants' disclosure in order to modify EP '515 and U.S. '853 in the manner as claimed in the instant application.

For reasons discussed above, Applicants respectfully submit that claim 1 and its dependent claims 2-7 are not *prima facie* obvious under 35 U.S.C. § 103(a) over EP '515 and U.S. '853. Applicants therefore respectfully request that the rejection of claims 1-7 under 35 U.S.C. §103(a) over EP '515 and U.S. '853 be withdrawn.

Rejection of Claims 9 and 10

The 1,2,4-thiadiazole compounds of claim 9 and its dependent claim 10 have a methylsulfinyl or methylsulfonyl substituent at the 3'-position of the thiadiazole ring. Claim 9 recites, *inter alia*:

“A 1,2,4-thiadiazole compound of the formula (II):



wherein L¹ represents methylsulfinyl or methylsulfonyl”

Applicants respectfully submit that EP ‘515 in view of U.S. ‘853 does not render claim 9 and its dependent claim 10 obvious, because EP ‘515 and U.S. ‘853, taken alone or in combination, fail to disclose or suggest a 1,2,4-thiadiazole compound having a methylsulfinyl or methylsulfonyl substituent at the 3'-position of the thiadiazole ring.

As discussed above, EP ‘515 discloses a 1,2,4-thiadiazole compound that is substituted at the 3'-position of the thiadiazole ring with a C₁-C₄ alkyl group. EP ‘515 fails to teach or suggest a 1,2,4-thiadiazole compound having a methylsulfinyl or methylsulfonyl substituent at the 3'-position of the thiadiazole ring. The genus of compounds disclosed in EP ‘515 does not include those in the instant claims, because a C₁-C₄ alkyl substituent is different from a methylsulfinyl or methylsulfonyl substituent. Therefore, one cannot select the claimed compounds from the genus of compounds of EP ‘515 as suggested by the Examiner.

U.S. ‘853 fails to compensate for the deficiency of EP ‘515. As discussed above, U.S. ‘853 discloses a 1,2,4-thiadiazole compound that is substituted at the 3'-position of the thiadiazole ring with a R₂ group selected from the group consisting of, halogen, -CF₃, -OR⁷, -SR⁷, -NR⁷R⁸, -NHOR⁷, -NHNH₂, -CN, -CO₂R⁷, -CONR⁷R⁸, C₂₋₄ alkenyl, C₂₋₄ alkynyl, C₃₋₆ cycloalkyl or C₁₋₂ alkyl substituted with -OR⁷, -NR⁷R⁸, -SR⁷, -CO₂R⁷, -CONR⁷R⁸ or halogen; wherein R⁷ and R⁸ independently represent hydrogen or C₁₋₂ alkyl. U.S. ‘853 fails to teach or suggest a 1,2,4-thiadiazole compound having a methylsulfinyl or methylsulfonyl substituent

at the 3'-position of the thiadiazole ring. The genus of compounds disclosed in U.S. '853 does not include those in the instant claims, because all of the listed substituents are different from a methylsulfinyl or methylsulfonyl substituent. Therefore, one also cannot select the claimed compounds from the genus of compounds of U.S. '853 as suggested by the Examiner.

Absent the teaching or suggestion of the claim element, i.e., a methylsulfinyl or methylsulfonyl substituent at the 3'-position of the thiadiazole ring, EP '515 in view of U.S. '853 cannot render claim 9 and its dependent claim 10 obvious. Again, the Examiner appears to have impermissibly relied on the Applicants' disclosure in order to modify EP '515 and U.S. '853 in the manner as claimed in the instant application, because the Examiner has failed to identify *any objective* teaching in the prior art, or that knowledge generally available to one of ordinary skill in the art, that would lead an individual to use a methylsulfinyl or methylsulfonyl substituent at the 3'-position of the thiadiazole ring of the 1,2,4-thiadiazole compound of EP '515 or U.S. '853.

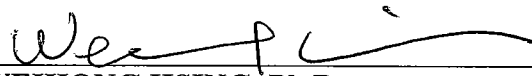
For reasons discussed above, Applicants respectfully submit that claim 9 and its dependent claim 10 are not *prima facie* obvious under 35 U.S.C. § 103(a) over EP '515 and U.S. '853. Applicants therefore respectfully request that the rejection of claims 9 and 10 under 35 U.S.C. §103(a) over EP '515 and U.S. '853 be withdrawn.

Conclusion

In view of the foregoing discussion, it is respectfully submitted that the present application, including currently pending claims 1-7, 9 and 10, is in condition for allowance and such action is respectfully requested.

Respectfully submitted,

Hideki IHARA, et al.

(Date) 6/27/2007 By: 
WEIHONG HSING, Ph.D.
Registration No. 51,823
AKIN GUMP STRAUSS HAUER & FELD LLP
One Commerce Square
2005 Market Street, Suite 2200
Philadelphia, PA 19103-7013
Telephone: 215-965-1200
Direct Dial: 215-965-1284
Facsimile: 215-965-1210
E-Mail: whsing@akingump.com

WWS/WH

Enclosures: IDS under 37 CFR 1.97(c)(2).